IN THE CLAIMS:

The text of all pending claims, (including withdrawn claims) is set forth below. Cancelled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~strikethrough~~. The status of each claim is indicated with one of (original), (currently amended), (cancelled), (withdrawn), (new), (previously presented), or (not entered).

Please CANCEL claims 19 and 20 without prejudice or disclaimer and AMEND claim 17 in accordance with the following:

1. (WITHDRAWN) A method of producing a tracking error signal as a difference signal of optical detection signals generated by more than two optical detectors positioned along a line diagonal to a track center, the method comprising:

binarizing each of the outputs of the optical detectors;

phase locking to generate respective clock signals synchronized with each of the binarized outputs;

detecting a phase difference between the synchronized clock signals; and

low-pass filtering the detected phase difference to output the tracking error signal.

2. (WITHDRAWN) A tracking error detecting apparatus for producing a tracking error signal as a difference signal of optical detection signals generated by more than two optical detectors positioned along a line diagonal line to a track center, the apparatus comprising:

binarizers which binarize each of the optical detection signals;

phase locked loops which generate clock signals synchronized with each of the outputs of the binarizers;

a phase difference detector which detects a phase difference between the synchronized clock signals output from the phase locked loops; and

a low-pass filter which filters the output of the phase difference detector to output the result as the tracking error signal.

3. (WITHDRAWN) The tracking error detecting apparatus as claimed in claim 2, further comprising equalizers which reinforce the high-frequency components of the optical detection signals and output the results to the binarizers.

4. (WITHDRAWN) The tracking error detecting apparatus as claimed in claim 3, wherein the equalizers remove low-frequency components of a spectrum from the optical detection signals, according to a recording modulation method.

5. (WITHDRAWN) The tracking error detecting apparatus as claimed in claim 2, wherein a clock signal provided to the phase locked loops is a channel clock signal.

6. (WITHDRAWN) The tracking error detecting apparatus as claimed in claim 5, further comprising a frequency divider which divides the frequency of the channel clock signal by n (where n=2,3,4,...) to output the result to the phase locked loops when a phase of an output signal is inverted.

7. (WITHDRAWN) The tracking error detecting apparatus as claimed in claim 2, wherein the phase difference detector generates a first phase difference signal indicating that a first synchronized clock signal output from the phase locked loops leads a second synchronized clock signal output from the phase locked loops, and a second phase difference signal indicating that the second synchronized clock signal leads the first synchronized clock signal, and

wherein the low-pass filters include first and second low-pass filters which filter the first and second phase difference signals, respectively, and

the tracking error detecting apparatus, further comprises a differential amplifier which generates a tracking error signal corresponding to a difference signal of the outputs of the first and second low-pass filters.

8. (WITHDRAWN) A tracking error detecting apparatus for producing a tracking error signal as a difference signal of optical detection signals generated by two optical detectors disposed at the outside of the track center of a three-section optical detection unit, the apparatus comprising:

binarizers which binarize each of the optical detection signals;

a phase difference detector which detects a phase difference between the binarized signals; and

a low-pass filter which filters the output of the phase difference detector to output the result as the tracking error signal.

9. (WITHDRAWN) The tracking error detecting apparatus as claimed in claim 8,

further comprising phase locked loops which couple the binarizers and the phase difference detector, wherein the phase locked loops generate clock signals synchronized with each of the outputs of the binarizers, to output synchronized signals to the phase difference detector,

wherein the phase difference detector detects a phase difference between the synchronized signals output from the phase locked loops.

10. (WITHDRAWN) An apparatus for providing a tracking error signal for an optical disk recording track, comprising:

first and second optical detectors which generate first and second electrical signals, respectively;

a circuit which binarizes the first and second electrical signals and phase locks each of the binarized signals to output first and second clock signals synchronized with the first and second binarized signals; and

a phase detector which compares a phase of the first synchronized clock signal with a phase of the second synchronized clock signal to generate the tracking error signal.

11. (WITHDRAWN) The apparatus as claimed in claim 10, wherein said first and second optical detectors are on a line transverse to the optical disk recording track.

12. (WITHDRAWN) The apparatus as claimed in claim 10, wherein said first and second optical detectors are on a line diagonal to the optical disk recording track.

13. (WITHDRAWN) The apparatus as claimed in claim 10, further comprising first and second equalizers which increase a high frequency component of the first and second electrical signals prior to binarizing said first and second electrical signals, respectively.

14. (WITHDRAWN) The apparatus as claimed in claim 13, wherein each said equalizer includes a differentiator which operates on the respective electrical signal.

15. (WITHDRAWN) The apparatus as claimed in claim 14, wherein each said differentiator operates on frequencies of the respective electrical signal which are less than a first value.

16. (WITHDRAWN) The apparatus as claimed in claim 14, wherein each said

differentiator operates on frequencies of the respective electrical signal which are greater than a first value.

17. (CURRENTLY AMENDED) An apparatus for providing a tracking error signal for an optical disk recording track, comprising:

a plurality of optical detectors each of which generates an electrical signal,

a matrix circuit which selects and adds said electrical signals in pairs to output at least one matrixed signal, each said pair corresponding to optical information detected along a line diagonal to said recording track;

a circuit which binarizes each matrixed signal;

~~and performs~~ a phase lock loop circuit~~operation~~ receiving a first clock signal and~~on~~ each matrixed signal, the phase lock loop circuit ~~to output~~outputting second and third clock signals synchronized with the respective matrixed signals; and

a phase detector which compares a phase of ~~one of said~~the second synchronized clock signal~~s~~ with a phase of ~~another of said~~the third synchronized clock signal~~s~~ to generate the tracking error signal, wherein the tracking error signal is independent of a length of pits and/or marks on the optical disk recording track.

18. (PREVIOUSLY PRESENTED) The apparatus as claimed in claim 17, further comprising first and second equalizers which increase a high frequency component of respective ones of the matrixed signals prior to respectively binarizing said matrixed signals.

19. (CANCELED).

20. (CANCELED).

21. (WITHDRAWN) The apparatus as claimed in claim 14, wherein each said differentiator operates on frequencies of the respective matrixed signal which are greater than a predetermined value.